LDWSF
12.3.412.1
9-26-00

RECEIVED

OCT - 6 2000

LONG PAINTING CO

September 26, 2000
0-91M-13728-0

Long Painting Company
P.O. Box 81435
Seattle, Washington 98108

Attention: Mr. Brian Vance
Facilities Manger

Subject: **PSCAA Notice of Construction Application (NOC) Number 7582**
Acceptable Source Impact Level Calculations

Dear Mr. Vance:

At your request, AMEC Earth & Environmental, Inc., has completed calculations of the estimated community impact levels of known volatile components of paints and other solvents used at your facility located in the South Park neighborhood. It is understood that in 1998, Long Painting Company submitted a Notice of Construction (NOC) to the Puget Sound Clean Air Agency (formerly Puget Sound Air Pollution Control Agency) for proposed facility improvements. Specifically, the projects provided for the installation and/or modification of the exhaust system configuration for Shed 6N and Shed 6S and the dust collection system for Shed 10. This NOC is referenced by the agency as No. 7582. The modeling described in this correspondence was requested to address comments received following subsequent public hearing(s) regarding community impact of site emissions. The calculated values confirm that the **operations at your South Park facilities do not exceed the established Acceptable Source Impact Levels (ASIL)** for quantities of volatile components of paints and other solvents identified to be in use.

The Puget Sound Clean Air Agency has established, and published, ASILs to assist in the assessment of the community impact of proposed emission sources[1]. In consideration of establishing ASILs, the agency utilizes scientific and engineering resources, as well as public hearings, that are independent of a site-specific review of a proposed emission source. By definition and practical use, the ASIL is an established concentration of a potential air contaminant in the outdoor (ambient community) atmosphere in an area that does not usually

[1] Puget Sound Clean Air Agency, Regulation III, Appendix A.

AMEC Earth & Environmental, Inc.
11335 N.E. 122nd Way, Suite 100
Kirkland, Washington
USA 98034
Tel (425) 820-4669
Fax (425) 821-3914
www.amec.com

require restricted or controlled public access. Therefore, the ASIL is a primary consideration made by the agency in evaluating the air quality impacts of a single source.

The enclosed table summarizes the estimated community impact levels, based on calculations, for the volatile components of paints and other solvents used at your South Park facility. Practical assumptions were used in preparing the calculated values. For example, the entire site was considered to be a single emission source (because specific compounds may be used at virtually any on-site location). Nominal stack height was assumed to be 30 feet (9.14 meters), although much taller stacks exist on major structures. The stack gas exhaust temperature was assumed to be 300 degrees Kelvin (approximately 80 degrees Fahrenheit – typical summer time temperature and conditions for mechanically exhausted paint areas). Daily emissions were calculated assuming 12 work-hours per day. The total mechanical exhaust capacity (multiple stacks) of the site was considered in calculating exhaust rates. In addition, the 1999 annual purchase inventory was used to estimate daily emissions based on 275 workdays per year (5.5 days per week, 50 weeks per year). Calculations were made at distances of 1, 50, 100, 150, and 200 meters from the site, representative of immediately adjacent properties as well as several blocks away.

In general, all volatile compounds were assumed to be potential emissions and the amount consumed in product production was not discounted. The exception was for compounds such as selected isocynates that are active reaction components consumed in the formulation of specific coating systems. Essentially all of the annual consumption of these materials is reacted completely in the finished formulation of the coating system. In addition, the vapor pressure of such compounds is so low that emissions of excess materials, from the buildings as a vapor, is not credible. For example, the vapor pressure of isophorone diisocynate is 0.0003 mm (Hg) at 68 F (20 C). In such application, these materials are not realistically regarded as volatile emissions from the site.

The data is presented for your review and use as appropriate. Should you have questions related to this matter, please contact me directly.

Sincerely,

Robert D. Gilmore, CIH
Principal

RDG/jdp

Attachments: As stated

\\KIRKLAND_MAIN\VOL1\SHARED\WORDPROC_Projects\13000s\13728 Long Painting\Long ASIL.doc

Calculated Impact Levels at Distances From Source

(Compared to ASILs)

Long Painting Company

South Park Neighborhood Facilities

AIR CONTAMINANT	EMISSION RATE (g/s)	ASIL (ug/m3)	Calculated Downwind Concentration (ug/m3)					% of ASIL
			1 m	50 m	100 m	150 m	200 m	at 50 m
Surface Coatings:								
Naphtha	0.0229	5,300	0.00	4.122	2.061	1.364	1.030	0.08
Glycol Ethers	0.0003	TBD	0.00	0.5292	0.2646	0.1751	0.1322	NA
Other VOC (VM&P Naphtha)	0.5924	4,600	0.00	106.6	53.28	35.26	26.62	2.32
Formaldehyde	0.0001	0.077	0.00	0.02646	0.01323	0.00875	0.00661	34.36
Ethanol	0.0504	NA	0.00	9.073	4.536	3.002	2.266	NA
Methanol	0.0235	NA	0.00	4.230	2.115	1.400	1.057	NA
Isopropyl Alcohol	0.0369	3,300	0.00	6.643	3.321	2.198	1.659	0.20
Acetone	0.0074	5,900	0.00	1.329	0.6641	0.4396	0.3319	0.02
n-Propyl Alcohol	0.0000	1,600	0.00	0.00	0.00	0.00	0.00	0.00
N-Butyl Alcohol	0.0377	500	0.00	6.787	3.393	2.245	1.695	1.36
Ethyl Silicate	0.0057	280	0.00	1.017	0.5085	0.3365	0.2541	0.36
IB Alcohol (Isobutyl Alcohol)	0.0063	510	0.00	1.127	0.5633	0.3728	0.2815	0.22
sec-Butyl Alcohol	0.0000	1,000	0.00	0.00	0.00	0.00	0.00	0.00
Methyl Ethyl Ketone	0.0186	1,000	0.00	3.348	1.674	1.108	0.8364	0.33
Trichloroethylene	0.0000	0.59	0.00	0.00	0.00	0.00	0.00	0.00
Dibutyl Phthalate	0.0000	17	0.00	0.00681	0.00340	0.00225	0.00170	0.04
Naphthalene	0.0020	170	0.00	0.3654	0.1827	0.1209	0.09128	0.21
Ethyl Benzene	0.0328	1,000	0.00	5.509	2.952	1.954	1.475	0.55
Epichlorohydrin	0.0002	0.83	0.00	0.03438	0.01719	0.01138	0.00859	4.14
Butane	0.0002	6,300	0.00	0.04122	0.02061	0.01364	0.01030	0.00
Ethylene Glycol	0.0001	420	0.00	0.01375	0.00687	0.00455	0.00343	0.00
Methyl Propyl Ketone	0.0158	2,300	0.00	2.844	1.422	0.9410	0.7105	0.12
Prop. Gly. Mono Methyl Ether	0.0089	2,000	0.00	1.609	0.8045	0.5325	0.4020	0.08
Methyl Isobutyl Ketone	0.0131	680	0.00	2.358	1.179	0.7802	0.5891	0.35
Isopropyl Acetate	0.0013	3,500	0.00	0.2394	0.1197	0.07921	0.05981	0.01
Methylcyclohexane	0.0000	5,400	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	0.0503	400	0.00	9.055	4.527	2.996	2.262	2.26
Cyclohexanone	0.0030	330	0.00	0.5436	0.2718	0.1799	0.1358	0.16
N-Propyl Acetate	0.0002	2,800	0.00	0.04122	0.02061	0.01364	0.0103	0.00
Methyl Isoamyl Ketone	0.0000	780	0.00	0.00	0.00	0.00	0.00	0.00

Calculated Impact Levels at Distances From Source

(Compared to ASILs)

Long Painting Company

South Park Neighborhood Facilities

AIR CONTAMINANT	EMISSION RATE (g/s)	ASIL (ug/m3)	Calculated Downwind Concentration (ug/m3)					% of ASIL at 50 m
			1 m	50 m	100 m	150 m	200 m	
Isobutyl Acetate	0.0149	2,400	0.00	2.682	1.341	0.8874	0.6700	0.11
Methyl N-Amyl Ketone	0.1430	780	0.00	25.74	12.87	8.517	6.430	3.30
2-Ethoxyethyl Acetate	0.0221	90	0.00	3.978	1.989	1.316	0.9938	4.42
2-Butoxyethanol	0.0065	400	0.00	1.183	0.5912	0.3913	0.2954	0.30
Dioctyl Phthalate (DEHP)	0.0013	2.5	0.00	0.2268	0.1134	0.07505	0.05666	9.07
Diacetone Alcohol	0.0000	790	0.00	0.00	0.00	0.00	0.00	0.00
N-Butyl Acetate	0.0658	2,400	0.00	11.85	5.921	3.919	2.959	0.49
Ethyl Acetate	0.0000	4,800	0.00	0.00681	0.00340	0.00225	0.00170	0.00
Heptane	0.0000	5,500	0.00	0.00	0.00	0.00	0.00	0.00
Amyl Acetate	0.0013	1800 (n-) 2,200 (sec-)	0.00	0.2268	0.1134	0.07505	0.05666	NA
Methyl Silicate	0.0023	20	0.00	0.4050	0.2025	0.1340	0.1012	2.03
HDI Isocyanate	0.0024	NA	0.00	0.4338	0.2169	0.1435	0.1084	NA
Xylene	0.3030	1,500	0.00	54.54	27.27	18.05	13.62	3.64
Trimethyl Benzene	0.0052	420	0.00	0.9325	0.4662	0.3085	0.2329	0.22
Orthophosphoric Acid (phosphoric acid)	0.0001	3.3	0.00	0.02088	0.01044	0.00691	0.00522	0.63
VM&P Naptha	0.0014	4,600	0.00	0.2502	0.1251	0.08279	0.06250	0.01
Aluminum	0.0002	6.7 (alkyls & sol. salts) 33 (Al dusts) 17 (pyro powder & weld. fumes)	0.00	0.02700	0.01350	0.00893	0.00675	0.403 (alkyls & sol. salts) 0.082 (Al dusts) 0.159 (pyro powder & weld. fumes)
Iron Oxide Fume	0.0000	17	0.00	0.00688	0.00344	0.00227	0.00172	0.04
Zinc Oxide Fume	0.0011	17	0.00	0.1980	0.09899	0.06552	0.04946	1.16
Thinning Solvents:								
Naphtha	0.0296	5,300	0.00	5.328	2.664	1.763	1.331	0.10
Other VOC (VM&P Naphtha)	0.0705	4,600	0.00	12.69	6.344	4.199	3.170	0.28

Calculated Impact Levels at Distances From Source

(Compared to ASILs)

Long Painting Company

South Park Neighborhood Facilities

AIR CONTAMINANT	EMISSION RATE (g/s)	ASIL (ug/m3)	Calculated Downwind Concentration (ug/m3)					% of ASIL
			1 m	50 m	100 m	150 m	200 m	at 50 m
Ethanol	0.0011	NA	0.00	0.1926	0.09629	0.06373	0.04811	NA
Isopropyl Alcohol	0.0288	3,300	0.00	5.184	2.592	1.715	1.295	0.16
Acetone	0.0089	5,900	0.00	1.597	0.7982	0.5283	0.3988	0.03
n-Propyl Alcohol	0.0000	1,600	0.00	0	0	0	0	0.00
N-Butyl Alcohol	0.0197	500	0.00	3.546	1.773	1.173	0.8858	0.71
Methylene Chloride	0.0001	0.56	0.00	0.01375	0.00687	0.00455	0.00343	2.46
sec-Butyl Alcohol	0.0000	1,000	0.00	0.00000	0.00000	0.00000	0.00000	0.00
Methyl Ethyl Ketone	0.2150	1,000	0.00	38.70	19.35	12.81	9.668	3.87
Trichloroethylene	0.0000	0.59	0.00	0.00	0.00	0.00	0.00	0.00
Naphthalene	0.0006	170	0.00	0.1031	0.05157	0.03413	0.02577	0.06
Ethyl Benzene	0.0093	1,000	0.00	1.665	0.8325	0.5509	0.4159	0.17
Prop. Gly. Mono Methyl Ether	0.0103	2,000	0.00	1.854	0.9269	0.6135	0.4632	0.09
Methyl Isobutyl Ketone	0.0495	680	0.00	10.25	4.497	2.958	2.215	1.51
Isopropyl Acetate	0.0011	3,500	0.00	0.1980	0.09899	0.06552	0.04946	0.01
Methylcyclohexane	0.0005	5,400	0.00	0.09649	0.04824	0.03192	0.02410	0.00
Toluene	0.0179	400	0.00	3.222	1.611	1.066	0.8049	0.81
Cyclohexanone	0.0004	330	0.00	0.06859	0.03429	0.02269	0.01713	0.02
Isobutyl Acetate	0.0014	2,400	0.00	0.2484	0.1242	0.08219	0.06205	0.01
Methyl N-Amyl Ketone	0.0164	780	0.00	2.952	1.476	0.9768	0.7374	0.38
2-Butoxyethanol	0.0026	400	0.00	0.4626	0.2313	0.1531	0.1156	0.12
N-Butyl Acetate	0.0025	2,400	0.00	0.4410	0.2205	0.1459	0.1102	0.02
Ethyl Acetate	0.0000	4,800	0.00	0.00688	0.00344	0.00227	0.00172	0.00
Heptane	0.0005	5,500	0.00	0.09649	0.04824	0.03192	0.02410	0.00
Xylene	0.1240	1,500	0.00	22.32	11.16	7.385	5.576	1.49
Trimethyl Benzene	0.0003	420	0.00	0.05166	0.02583	0.01709	0.01291	0.01

Calculations made using SCREEN 3, a software model based on EPA criteria. Reference "Screening Procedures for Estimating Air Quality Impact of Stationary Sources" (EPA, 1988).